PATENT

Docket No.: 100111090-2
Appl. Ser. No.: TBD

IN THE CLAIMS:

Please find below a listing of all of the pending claims. The statuses of the claims are set forth in parentheses.

1. (Currently amended) A method for cooling a room configured to house a plurality of computer systems, said method comprising:

providing a heat exchanger unit configured to receive air from said room and to deliver air to said room;

supplying said heat exchanger unit with cooling fluid <u>from an air conditioning unit having a refrigeration loop including a variable capacity compressor and a refrigerant,</u> ~~wherein said cooling fluid is operable to cool said received air in said heat exchanger unit~~;

<u>cooling said received air through heat exchange with the cooling fluid in the heat exchanger unit;</u>

sensing temperatures at one or more locations in said room;<u> and</u>

controlling at least one of the temperature of said cooling fluid and said air delivery to said room in response to said sensed temperatures at said one or more locations.

2. (Currently amended) The method according to claim 1, ~~further comprising:~~

~~providing a cooling device configured to manipulate the temperature of said cooling fluid,~~ wherein said step of controlling at least one of a temperature of said cooling fluid and said air delivery to said room comprises varying an output of said <u>air conditioning unit</u> ~~cooling device~~ to control the temperature of said cooling fluid.

3. (Currently amended) The method according to claim 2, ~~wherein said cooling device comprises a refrigeration loop having a variable capacity compressor and a refrigerant,~~

2

PATENT

Docket No.: 100111090-2
Appl. Ser. No.: TBD

and wherein said step of controlling the temperature of said cooling fluid comprises

controlling the temperature of said refrigerant through operation of said variable capacity

compressor.

4. (Canceled).

5. (Original) The method according to claim 1, further comprising:

determining whether the sensed temperatures at one or more locations in said room

are within a predetermined range.

6-8. (Canceled).

9. (Original) The method according to claim 5, further comprising:

varying the cooling fluid temperature in response to the sensed temperatures at one or

more locations in said room being outside of said predetermined range.

10. (Original) The method according to claim 9, further comprising:

increasing said cooling fluid temperature in response to a sum of the sensed

temperatures at one or more locations being below said predetermined range.

11. (Original) The method according to claim 9, further comprising:

decreasing said cooling fluid temperature in response to a sum of the sensed

temperatures at one or more locations being above said predetermined range.

12-17. (Canceled).

PATENT

Docket No.: 100111090-2
Appl. Ser. No.: TBD

18. (Currently amended) A system for cooling a room containing one or more computer systems, said system comprising:

a heat exchanger unit configured to receive cooling fluid through a cooling fluid line from an air conditioning unit and to receive air through an opening in the heat exchanger unit, wherein said air ~~may be~~ is cooled through heat transfer with said cooling fluid in the heat exchanger unit;

said air conditioning unit having a at least one of a variable capacity compressor, a heat exchanger, a chiller;

said heat exchanger unit having at least one fan configured to cause air to flow into and flow out of the heat exchanger unit;

a heat exchanger controller operable to control a supply of said cooling fluid to said heat exchanger unit and operable to control the speed of the at least one fan;

~~a device for cooling said cooling fluid;~~ and

~~a cooling device~~ an air conditioning unit controller configured to operate the ~~device for cooling~~ air conditioning unit to vary the temperature of said cooling fluid.

19. (Original) The system according to claim 18, further comprising one or more temperature sensors, wherein said heat exchanger controller is configured to receive environmental condition information from said one or more temperature sensors.

20-23. (Canceled).

24. (Currently amended) The system according to claim 18, wherein said ~~cooling device comprises at least one of a variable capacity compressor, a heat exchanger, a chiller,~~ ~~and a~~ cooling device controller is configured to control said at least one of said variable

PATENT

Docket No.: 100111090-2
Appl. Ser. No.: TBD

capacity compressor, said heat exchanger, and said chiller, to thereby control the temperature of the cooling fluid.

25. (Original) The system according to claim 24, wherein said cooling device controller is configured to communicate with said heat exchanger controller.

26. (Original) The system according to claim 25, wherein said communication between the cooling device controller and the heat exchanger controller includes communication of information pertaining to the level of operation of said one or more heat exchanger units, and wherein said cooling device controller is configured to operate said at least one of the variable capacity compressor, heat exchanger, and chiller in response to said information.

27. (Original) The system according to claim 25, wherein said communication comprises at least one of temperature measurements and heat exchanger unit operations.

28 and 29. (Canceled)

30. (Currently amended) A system for cooling computer systems housed in one or more racks, said racks being maintained in a room, said system comprising:

means for receiving air from the room;

means for cooling the received air in the means for receiving air, said means for cooling including means for receiving cooling fluid from an air conditioning unit having a variable capacity compressor;

means for delivering cooled air to said computer systems;

PATENT

Docket No.: 100111090-2
Appl. Ser. No.: TBD

means for measuring temperatures at one or more locations in said room;

means for controlling delivery of said cooled air in response to the temperature

measurements; and

means for controlling the temperature of said cooling fluid.

31. (Original) The system according to claim 30, further comprising:

means for controlling delivery of cooling fluid through said cooling means.

32. (New) The method according to claim 1, further comprising:

communicating the level of operation of the heat exchanger unit to a controller of the

air conditioning unit; and

wherein the step of controlling at least one of the temperature of said cooling fluid

further comprises varying the capacity of the variable capacity compressor to vary the

temperature of said cooling fluid in response to the communicated level of operation of the

heat exchanger unit.

33. (New) The method according to claim 5, wherein the step of controlling at least

one of the temperature of said cooling fluid and said air delivery further comprises

manipulating at least one of the temperature of said cooling fluid and said air delivery in

response to a determination of the sensed temperatures at one or more locations in said room

being outside the predetermined range.

34. (New) The method according to claim 5, further comprising:

accessing an algorithm in a memory to determine manners of controlling at least one

of the temperature of said cooling fluid and said air delivery to said room in response to a

PATENT

Docket No.: 100111090-2
Appl. Ser. No.: TBD

determination of the sensed temperatures at one or more locations in said room being outside the predetermined range.

35. (New) The system according to claim 30, wherein the means for cooling air comprises means for receiving air from the room.

36. (New) The system according to claim 30, wherein the means for controlling the temperature of said cooling fluid comprises means for varying the capacity of the variable capacity compressor.

37. (New) The system according to claim 30, further comprising:

means for communicating a level of operation of the heat exchanger unit from a controller for the heat exchanger unit and a controller for the air conditioning unit; and

means for varying the capacity of the variable capacity compressor in response to the level of operation of the heat exchanger unit communicated by the means for communicating.

38. (New) The system according to claim 30, further comprising:

means for determining whether the sensed temperatures at one or more locations in said room are within a predetermined range.

39. (New) A computer readable storage medium on which is embedded one or more computer programs, said one or more computer programs implementing a method for cooling a room configured to house a plurality of computer systems, said one or more computer programs comprising a set of instructions for:

PATENT

Docket No.: 100111090-2
Appl. Ser. No.: TBD

supplying a heat exchanger unit configured to receive air from the room and to deliver

air to the room with cooling fluid from an air conditioning unit having a refrigeration loop

including a variable capacity compressor and a refrigerant;

cooling said received air through heat exchange with the cooling fluid in the heat

exchanger unit;

sensing temperatures at one or more locations in said room; and

controlling at least one of the temperature of said cooling fluid and said air delivery to

said room in response to said sensed temperatures at said one or more locations.

40. (New) The computer readable storage medium according to claim 39, said one or

more computer programs further comprising a set of instructions for:

controlling the temperature of said refrigerant through operation of said variable

capacity compressor.